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ABSTRACT

Between June 1987 and June 1989, Piedmont Virginia Community College (PVCC) undertook several activities to assess student outcomes in accordance with the college's 1987 plan for student assessment. Specific measures included determining entering student characteristics, college transfer education outcomes, occupational/technical education outcomes, general education outcomes, and developmental education outcomes. Findings of the two-year effort include the following: (1) 18.7% of the fall semester 1988 headcount were first-time students, while 15.8% were transfer students; (2) first-time students, were typically younger and more likely to study full-time than transfer students; (3) PVCC transfer students perform about as well academically as students who started as freshmen at the senior insitutions, earning a grade point average on the whole of 2.8; (4) 73.3% of the students who transferred to a senior institution after completing a two-year program rated the level of their academic preparation as either excellent or good; (5) between 70% and 85% of all graduates in occupational/technical programs found full-time employment in jobs related to their fields of study; (6) 5.5% of the employers of graduates from the 1984-85 and 1985-86 classes rated the occupational/ technical education at PVCC as excellent, while 71.2% rated it as good; (7) most PVCC faculty believed that general education objectives were clearly stated and appropriate to course goals and objectives; and (8) on the average, students enrolled in developmental writing courses made significant progress, while those enrolled in developmental math courses nearly doubled their scores on assessment tests. A timetable for the continued implementation of the PVCC assessment plan is included in the report. (JMC)

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PIEDMONT VIRGINIA COMMUNITY COLLEGE STUDENT ASSESSMENT REPORT

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and

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Research Report No. 4-89

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PVCC Institutional Research Brief

June 1989

STUDENT ASSESSMENT AT PIEDMONT VIRGINIA COMMUNITY COLLEGE

The *Piedmont Virginia Community College Student Assessment Report*[1] describes student outcome assessment activities conducted at Piedmont Virginia Community College (PVCC) between June 1987, when the *Piedmont Virginia Community College Student Assessment Plan* was published, and June 1989. Specific assessment activities examined in the report include entering student characteristics, college transfer education outcomes, occupational/technical education outcomes, general education outcomes, and developmental education outcomes.

Two studies, conducted annually, shed light on entering student characteristics. The first, titled *PVCC New Student Profile*, lists characteristics of first-time and transfer students during the fall term; the second, titled *PVCC "Market Share" of Selected High Schools*, lists the number and percentage of students entering the college from public high schools within the PVCC service region.

As a result of the statewide assessment movement in Virginia, public senior institutions of higher education annually provide data to PVCC on the academic progress of PVCC transfer students to those institutions. Preliminary analysis of data received so far indicates that PVCC transfers perform academically about as well as students who started as freshmen at the senior institutions. The average grade point average (GPA) of PVCC transfer students at the five instituions was 2.8. Considerable information on college transfer education outcomes is also provided in the annual graduate surveys conducted by PVCC. Typically, graduates who transfer to four-year colleges or universities perform quite well academically (the average GPA for 1986-87 graduate survey respondents was 3.21) and were pleased with the academic preparation for transfer they received at PVCC.

Between 70% and 85% of all graduates in occupational/technical programs find full-time employment in jobs related to their fields of study at PVCC. These occupations generally show high growth rates and ample job opportunities. Approximately 90% of all PVCC graduates during the past decade have either been very satisfied or satisfied with their jobs, and the vast majority rate their academic

[1] PVCC Institutional Research Report No. 4-89, June 1989

(Continued on reverse side)

preparation at PVCC as either excellent or good. In the health occupations, graduates have consistently scored well on licensure examinations.

Employers have been pleased with PVCC's occupational/technical graduates and programs. Nearly 80% of all employers surveyed during the past two years have rated occupational/technical education at PVCC as either excellent (5.5%) or good (71.2%), and approximately the same percentage have felt PVCC graduates possessed excellent or good technical job skills and work habits.

Assessing general education outcomes has been difficult. Two nationally normed tests, the ACT Comp and a pilot version of the ETS Profile, were administered to PVCC students, but the results were disappointing. However, PVCC has developed general education objectives, and a survey of all faculty showed that these objectives were clearly stated and appropriate to course goals and objectives. Employers of PVCC graduates have generally rated general education at the college as "GOOD (better than most)."

All curricular students and all students planning to enroll in mathematics or English courses are assessed for current levels of skill in reading, writing, and mathematics. Currently, a tracking system is being implemented to accurately monitor developmental students. Between 45% and 60% of all students tested in reading and writing required either (or both) developmental reading or developmental writing. The need for remediation in reading, though, was much lower than that in writing. Preliminary analysis reveals that students enrolled in developmental courses in both writing and math make significant gains in skills by taking developmental courses at the college. Gains in scores between different versions of the developmental tests administered both at the beginning and the end of developmental classes were statistically significant. Additionally, preliminary analysis of writing samples administered both at the beginning and the end of developmental writing classes indicates that the majority of students improved significantly.

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PIEDMONT VIRGINIA COMMUNITY COLLEGE
STUDENT ASSESSMENT REPORT

EXECUTIVE SUMMARY

The *Piedmont Virginia Community College Student Assessment Report* describes student outcome assessment activities conducted at Piedmont Virginia Community College (PVCC) between June 1987, when the *Piedmont Virginia Community College Student Assessment Plan* was published, and June 1989. Specific assessment activities examined in the report include entering student characteristics, college transfer education outcomes, occupational/technical education outcomes, general education outcomes, and developmental education outcomes.

Two studies, conducted annually, shed light on entering student characteristics. The first, titled *PVCC New Student Profile*, lists characteristics of first-time and transfer students during the fall term; the second, titled *PVCC "Market Share" of Selected High Schools*, lists the number and percentage of students entering the college from public high schools within the PVCC service region.

As a result of the statewide assessment movement in Virginia, public senior institutions of higher education annually provide data to PVCC on the academic progress of PVCC transfer students to those institutions. Preliminary analysis of data received so far indicates that PVCC transfers perform academically about as well as students who started as freshmen at the senior institutions. The average grade point average (GPA)

of PVCC transfer students at the five instituions was 2.8. Considerable information on college transfer education outcomes is also provided in the annual graduate surveys conducted by PVCC. Typically, graduates who transfer to four-year colleges or universities perform quite well academically (the average GPA for 1986-87 graduate survey respondents was 3.21) and were pleased with the academic preparation for transfer they received at PVCC.

Between 70% and 85% of all graduates in occupational/technical programs find full-time employment in jobs related to their fields of study at PVCC. These occupations generally show high growth rates and ample job opportunities. Approximately 90% of all PVCC graduates during the past decade have either been very satisfied or satisfied with their jobs, and the vast majority rate their academic preparation at PVCC as either excellent or good. In the health occupations, graduates have consistently scored well on licensure examinations.

Employers have been pleased with PVCC's occupational/technical graduates and programs. Nearly 80% of all employers surveyed during the past two years have rated occupational/technical education at PVCC as either excellent (5.5%) or good (71.2%), and approximately the same percentage have felt PVCC graduates possessed excellent or good technical job skills and work habits.

Assessing general education outcomes has been difficult. Two nationally normed tests, the ACT Comp and a pilot version of the ETS Profile, were administered to PVCC students, but the results were disappointing. However, PVCC has developed general

education objectives, and a survey of all faculty showed that these objectives were clearly stated and appropriate to course goals and objectives. Employers of PVCC graduates have generally rated general education at the college as "GOOD (better than most)."

All curricular students and all students planning to enroll in mathematics or English courses are assessed for current levels of skill in reading, writing, and mathematics. Currently, a tracking system is being implemented to accurately monitor developmental students. Between 45% and 60% of all students tested in reading and writing required either (or both) developmental reading or developmental writing. The need for remediation in reading, though, was much lower than that in writing. Preliminary analysis reveals that students enrolled in developmental courses in both writing and math make significant gains in skills by taking developmental courses at the college. Gains in scores between different versions of the developmental tests administered both at the beginning and the end of developmental classes were statistically significant. Additionally, preliminary analysis of writing samples administered both at the beginning and the end of developmental writing classes indicates that the majority of students improved significantly.

PIEDMONT VIRGINIA COMMUNITY COLLEGE
STUDENT ASSESSMENT REPORT

INTRODUCTION

In 1986, the Virginia legislature mandated that each public institution of higher education develop its own plan to assess the outcomes of undergraduate education within general guidelines established by the State Council for Higher Education in Virginia (SCHEV). On June 18, 1987, Piedmont Virginia Community College (PVCC) submitted the *Piedmont Virginia Community College Student Assessment Plan*, hereafter referred to simply as the Plan, to the Virginia Community College System (VCCS). Both the VCCS and SCHEV approved the Plan without revision.

SCHEV guidelines call for each institution to begin reporting information on student outcomes assessment during the summer of 1989. Information to be reported includes outcomes in the major and in general education, placement of students in and the success of remediation, and alumni follow-up.

This document is PVCC's report on its student assessment plan. All areas included in the Plan are covered in this report. The report itself was written by the coordinator of institutional research and planning with the assistance of members of the ad hoc committee on student assessment. Committee members are Edward A. Kingston, Chair and Associate Professor of Business Management; J. W. Albright, Assistant Professor and Counselor; Dorothy S. Cluff, Assistant Professor of Nursing;

Lloyd A. Flanigan, Associate Professor of English and German; John R. Fogelgren, Associate Professor of Mathematics; Thomas A. Myers, Associate Professor of Business Management; James R. Perkins, Associate Professor and Dean of Instruction; David L. Priddy, Associate Professor of Economics; and James A. Schmidt, Associate Professor and Coordinator of Admissions, Records and Financial Aid. Because of the importance of student outcomes assessment, this committee will become a standing committee of the college beginning with the 1989-90 academic year.

ENTERING STUDENT CHARACTERISTICS

GENERAL. To assess general characteristics of entering students, the Office of Institutional Research and Planning conducts two important studies annually. Although neither study directly addresses the general level of achievement of entering students, both provide information on who PVCC entering students are. Without a knowledge of entering student characteristics, a discussion of entering student achievement is meaningless.

The first study, titled *PVCC New Student Profile*, lists characteristics of first-time and transfer students during the fall term; the second, titled *PVCC "Market Share" of Selected High Schools*, lists the number and percentage of students entering the college from the public high schools within the PVCC service region. Summaries of the latest of both studies are presented below.[1]

It should be noted that all entering curricular students, both full- and part-time, are assessed through placement tests in writing, reading, and mathematics. Methods and results of this assessment are described in the section of this report on developmental education outcomes (p.38).

Finally, with respect to entering student characteristics, in PVCC's *Student Assessment Plan*, it was "anticipated that a nationally normed test of general education objectives would be administered to curricular students in order to develop entering

---

[1]See *PVCC New Student Profile: Fall Semester 1988* (PVCC Institutional Research Report No. 2-89, February 1989) and *PVCC "Market Share" of Selected High Schools--Graduating Class of 1987* (PVCC Institutional Research Report No. 8-88, October 1988).

class baseline information." [2] Although two nationally normed tests of general education have been administered to PVCC students, none has been administered to entering students. Results from these two tests have not yet warranted their widespread use at the college. For further information, see the section in this report on general education outcomes assessment (p.27).

NEW STUDENT CHARACTERISTICS. One-thousand four-hundred fifty new students enrolled at PVCC during Fall Semester 1988. Of these, 786 were first-time students and 664 were transfer students.[3] New students accounted for 34.5% of the total fall semester 1988 headcount. As can be seen in Table 1, 18.7% of the student headcount consisted of first-time students, 15.8% consisted of transfer students, and 65.5% consisted of returning students.

While the proportion of new to returning students has been relatively constant during the past five years, the proportion of first-time to transfer students has not. As can be seen in Table 1, between fall 1984 and fall 1985, the number of first-time students plunged sharply and the number of transfer students rose steeply. During Fall Quarter 1985, the number of first-time students was the lowest in 11 years, and the number of transfer students was the highest ever. Between Fall Quarter 1985 and Fall

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[2]PVCC *Student Assessment Plan*, p. 18.

[3]Students new to both PVCC and college in general are classified as first-time; students new to PVCC but having one or more credits from other institutions of higher education are classified as transfer; students who have taken classes at PVCC previously are classified as returning.

Quarter 1987, first-time student enrollment increased by 14.5% and transfer student enrollment decreased by 1.9%. Between fall 1987 and fall 1988, both first-time and transfer student enrollment decreased, but the gap, or difference, between the two remained approximately the same.

TABLE 1: PVCC FALL TERM HEADCOUNT BY TYPE OF STUDENT

Year	First-Time Students No.	Pct.	Transfer Students No.	Pct.	Returning Students No.	Pct.	TOTAL STUDENTS No.	Increase
1972	270	58.4%	180	39.0%	12	2.6%	462	--
1973	469	42.8%	403	36.8%	224	20.4%	1096	137.2%
1974	504	32.8%	466	30.3%	566	36.8%	1536	40.1%
1975	975	48.4%	88	4.4%	953	47.3%	2016	31.3%
1976	881	43.4%	98	4.8%	1049	51.7%	2028	0.6%
1977	1237	47.3%	74	2.8%	1305	49.9%	2616	29.0%
1978	1488	48.3%	79	2.6%	1513	49.1%	3080	17.7%
1979	1366	42.5%	93	2.9%	1752	54.6%	3211	4.3%
1980	1396	39.4%	92	2.6%	2057	58.0%	3545	10.4%
1981	1144	30.8%	355	9.6%	2215	59.6%	3714	4.8%
1982	912	26.7%	269	7.9%	2236	65.4%	3417	-8.0%
1983	1120	29.7%	291	7.7%	2359	62.6%	3770	10.3%
1984	759	20.7%	547	14.9%	2362	64.4%	3668	-2.7%
1985	696	18.1%	702	18.2%	2449	63.7%	3847	4.9%
1986	756	18.3%	708	17.1%	2675	64.6%	4139	7.6%
1987	797	18.3%	689	15.8%	2875	65.9%	4361	5.4%
1988	786	18.7%	664	15.8%	2748	65.5%	4198	-3.7%

SOURCE: VCCS Student Enrollment Booklet, Table 38. Note that percentages are by row.

As has been reported in previous studies of new students, the differences among new students were more pronounced than the differences between new and returning students. First-time students were typically younger than transfer students and more likely to study full-time at PVCC. Proportionally more first-time students studied during the day at the main PVCC campus than did transfer students. A larger percentage of first-time students were enrolled in programs of study leading toward degrees or certificates.

AREA HIGH SCHOOL STUDENT CHARACTERISTICS. The term "market share" refers to the percentage of a high school graduating class which enrolls at Piedmont Virginia Community College (PVCC) during the academic year immediately following high school graduation. Figure 1 displays both the total and the full-time "market share" for all public high schools within the PVCC service region.

PVCC enrolled over 20% of all 1987 graduates from three schools: Albemarle

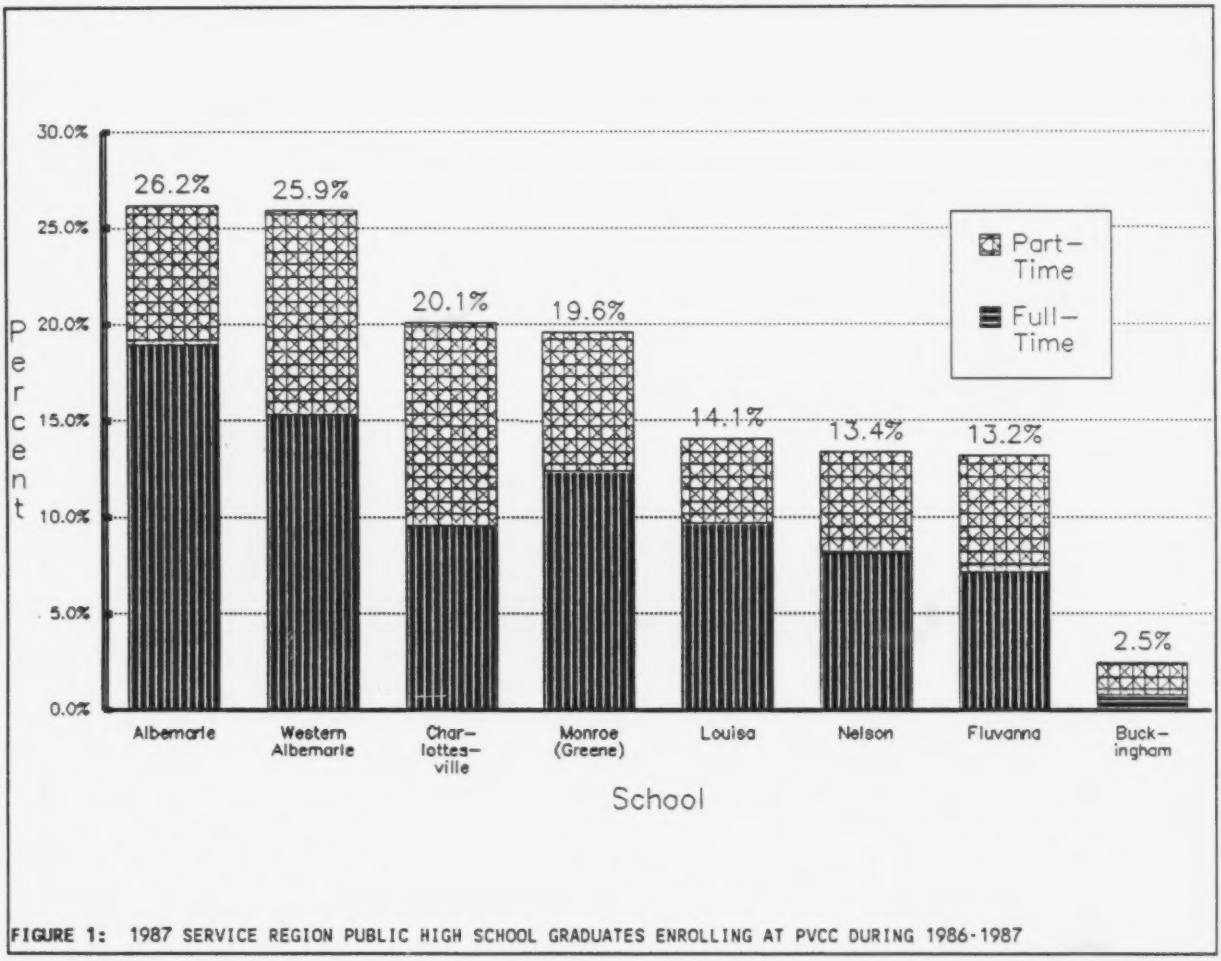

FIGURE 1: 1987 SERVICE REGION PUBLIC HIGH SCHOOL GRADUATES ENROLLING AT PVCC DURING 1986-1987

(26.2%), Western Albemarle (25.9%), and Charlottesville (20.1%). The "market share" figure for William Monroe was just under 20% (19.6%). Only one school, Buckingham, had a "market share" figure below 10% (2.5%). It should be noted, however, that Buckingham is within the service region of both PVCC and Southside Virginia Community College.

In terms of both total and full-time "market share," 1987-1988 figures were the highest since 1983-1984 (see Figure 2). It is evident that PVCC's recruiting strategies in service region high schools have, to a large degree, been successful. However, this

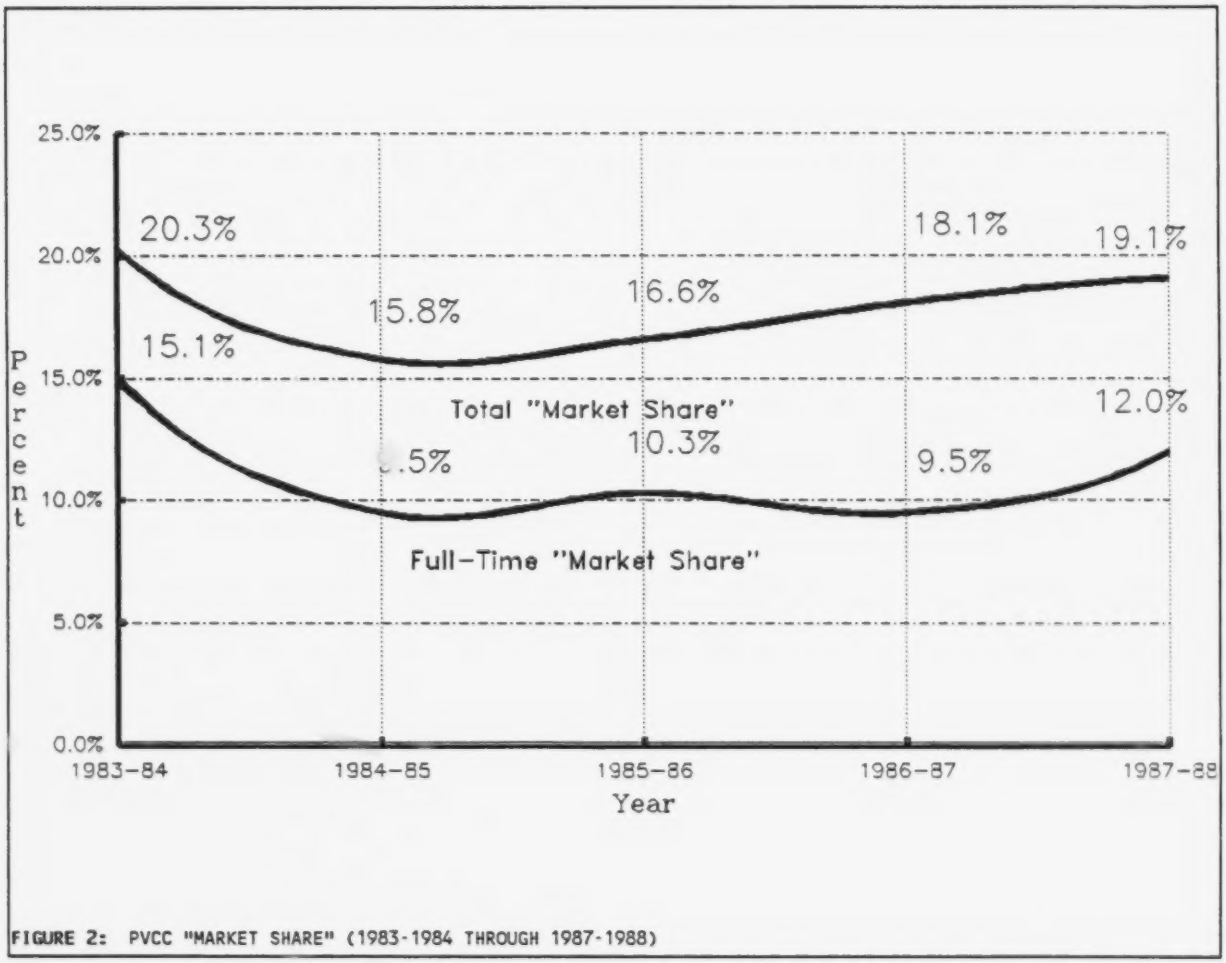

FIGURE 2: PVCC "MARKET SHARE" (1983-1984 THROUGH 1987-1988)

seems to be the time for the college to capitalize on these efforts and improve recruiting even more. For one thing, PVCC has converted from a quarter to a semester system, and this might prove attractive to recent high school graduates wishing to enroll

as full-time college students. For another, the pool of available service region public high school graduates will increase during the next several years. Between 1987 and 1988, the number of graduates increased by 1.3%. Between 1988 and 1989, it is projected to increase by another 1.3%, and between 1989 and 1990, it is projected to increase by 2.5%.

COLLEGE TRANSFER EDUCATION OUTCOMES

GENERAL. As noted in the Plan, PVCC has twice conducted in-depth studies of the academic performance of its transfer students to the University of Virginia (UVa).[4] However, as noted in the 1988 Progress Report, "because of the immense complexity of undertaking such studies, and because cooperation with senior institutions is required, no time table for [similar] studies has been or will be established." [5]

At this time, the college has decided to wait and determine what type of information is provided by senior institutions under the new statewide articulation agreement formulated by SCHEV. If sufficient information is furnished on the academic progress of transfer students, the need to conduct studies similar to the two UVa studies will have diminished. Currently, over half of the institutions which have agreed to provide data to PVCC in this the first year of the agreement have done so. Information from these schools is provided in the next section of this report.

A considerable amount of information on PVCC college transfer students is collected annually through the graduate survey. Annual graduate surveys provide information on which institutions PVCC graduates transfer to, their grades at the transfer

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[4]See Frank J. Doherty and George B. Vaughan, *The Academic Performance of PVCC Transfer Students at the University of Virginia* (PVCC Institutional Research Report No. 5-84, July 1984) and Sterling Deal and Ronald B. Head, *Follow-Up Survey of the Academic Performance of Piedmont Virginia Community College Transfer Students at the University of Virginia* (PVCC Institutional Research Report No. 2-86, July 1986).

[5]PVCC Progress Report on Student Assessment Plan, 25 May 1988, p. 1.

institutions, and their perceptions regarding their PVCC academic preparation for transfer. A very brief summary of some of this information is presented in this report.

ARTICULATION WITH VIRGINIA PUBLIC COLLEGES AND UNIVERSITIES. In the summer of 1988, as provided by Guideline 8 of the SCHEV *Guidelines for Student Assessment*, eight public senior institutions of higher education agreed to provide data to PVCC on the academic progress of PVCC transfer students to those institutions. These eight institutions were George Mason University (GMU), James Madison University (JMU), Longwood College, Old Dominion University (ODU), Radford University, the University of Virginia (UVa), Virginia Commonwealth University (VCU), and Virginia Polytechnic Institute and State University (VPI&SU). As of the date of this report, five of the eight senior institutions had provided data to PVCC. When all data has been collected and analyzed, PVCC's Office of Institutional Research and Planning will publish a detailed report on its college transfer students. This report will be shared with all PVCC faculty and administrators.

Preliminary information indicates that PVCC transfers to senior institutions perform academically about as well as students who started as freshmen at the senior institutions. As can be seen in Table 2, the average GPA of PVCC transfer students at the five senior institutions which provided data to PVCC was 2.8. This GPA figure is probably close to the average GPA for all students at these senior institutions. At UVa, for instance, the mean cumulative GPA for all undergraduates through Fall Semester

1988 was 2.953; the mean cumulative GPA for PVCC transfers was 2.957. At James Madison, the average GPA for all students is typically between 2.77 and 2.80; the average GPA for PVCC transfers was 2.756.

TABLE 2: ACADEMIC PROGRESS OF PVCC TRANSFER STUDENTS TO VIRGINIA PUBLIC COLLEGES AND UNIVERSITIES (1988-89)

Senior Institution	No. PVCC Transfers	Avg. GPA	Min. GPA	Max. GPA
George Mason University	--	--	--	--
James Madison University	85	2.756	1.000	4.000
Longwood College	--	--	--	--
Old Dominion University	12	2.703	1.980	3.490
Radford University	16	2.719	1.615	3.575
University of Virginia	141	2.957	0.000	4.000
Virginia Commonwealth University	28	2.421	0.571	4.000
Virginia Polytechnic Institute & State University	--	--	--	--
TOTAL		2.800	0.000	4.000

It is Interesting to note that the average GPA for PVCC transfers, as reported by these four senior institutions, was considerably lower than that reported in PVCC annual graduate surveys. Graduates typically report GPA's between 3.0 and 3.4. One possible explanation for this discrepancy is that students who graduate from PVCC before transferring to senior institutions perform better academically than students who transfer without graduating. Senior institutions report *all* PVCC transfers, and not just graduates. Another possible explanation is that graduates with poor GPA's either do not complete graduate surveys or else inflate their GPA's when completing the survey forms.

GRADUATE EVALUATION OF COLLEGE TRANSFER EDUCATION. Because of its proximity and excellent academic reputation, a large number of PVCC graduates transfer to UVa each year. With the advent of the joint adult degree program between Mary Baldwin College and PVCC, a large number also transfer to Mary Baldwin. A third institution which has enrolled a large number of PVCC graduates each year has been James Madison University. Fields of study by four-year institutions of 1986-87 PVCC graduate survey respondents are shown in Table 3.

TABLE 3: FIELDS OF STUDY AT FOUR-YEAR COLLEGES OR UNIVERSITIES OF 1986-87 PVCC GRADUATE SURVEY RESPONDENTS

FIELD OF STUDY	Mary Bald-win	UVa	JMU	Rad-ford	Tem-ple	Notre Dame	GMU	VCU	ODU	Bay-lor	Long wood	MWC	TOTAL
Accounting	0	0	1	0	0	0	0	0	0	0	0	0	1
American Studies	1	0	0	0	0	0	0	0	0	0	0	0	1
Anthropology	0	0	1	0	0	0	0	0	0	0	0	0	1
Art	1	0	1	0	0	0	0	1	0	0	0	0	3
Business	6	1	1	0	0	0	0	0	0	0	1	1	10
Computer Science	0	0	0	1	0	0	0	0	0	0	0	0	1
Education	0	0	1	0	0	0	0	0	0	0	0	0	1
Electronics	0	1	0	0	0	0	0	0	0	0	0	0	1
Engineering	0	1	0	0	0	0	0	0	0	0	0	0	1
English	0	0	0	1	0	0	0	0	0	0	0	0	1
Environmental Science	0	1	0	0	0	0	0	0	0	0	0	0	1
History	0	1	0	0	0	0	0	0	0	0	0	0	1
International Studies	0	1	0	0	0	0	0	0	0	0	0	0	1
Journalism	0	0	0	0	0	0	0	0	0	1	0	0	1
Library Science	0	0	0	1	0	0	0	0	0	0	0	0	1
Nursing	0	1	0	0	0	1	0	0	0	0	0	0	2
Physical Education	0	0	0	0	0	0	0	0	1	0	0	0	1
Psychology	0	1	0	0	0	0	0	0	0	0	0	0	1
Sociology	1	0	0	0	0	0	0	0	0	0	0	0	1
Visual Arts	0	0	0	0	1	0	0	0	0	0	0	0	1
TOTAL	9	8	5	3	1	1	--	1	1	1	1	1	32

Typically, PVCC graduates who transfer to four-year colleges or universities perform quite well academically. For 1986-87 graduate survey respondents, as can be seen in Table 4, the average GPA at the colleges or universities they selected was 3.210. The lowest GPA reported was 2.000 and the highest was 4.000. Academically, as measured by GPA, 1986-87 survey respondents performed about as well as previous graduating classes. The average GPA of 1986-87 survey respondents was lower than the average GPA of 1985-86 respondents (3.371) but higher than the average GPA of any other class except that of 1978-79 (3.250).

TABLE 4: GPA'S OF 1986-87 PVCC GRADUATE SURVEY RESPONDENTS AT FOUR-YEAR COLLEGES OR UNIVERSITIES

CATEGORY	No.	Average GPA	Minimum GPA	Maximum GPA
Mary Baldwin	8	3.831	3.300	4.000
University of Virginia	8	2.888	2.050	3.700
James Madison	5	2.891	2.000	3.400
Radford	3	3.474	3.100	4.000
Temple	1	2.500	2.500	2.500
Notre Dame	--	--	--	--
George Mason	--	--	--	--
Virginia Commonwealth	1	3.830	3.830	3.830
Old Dominion	1	2.280	2.280	2.280
Baylor	1	3.200	3.200	3.200
Longwood	1	2.300	2.300	2.300
Mary Washington	1	3.020	3.020	3.020
TOTAL	30	3.210	2.000	4.000

The vast majority of PVCC graduates have been quite satisfied with their academic preparation at PVCC for college transfer. During the past decade, no survey respondent has rated his or her academic preparation as poor. Quite to the contrary, the vast majority have rated it as either excellent or good. Table 5 shows the evaluation by 1986-87 survey respondents of their academic preparation by their

program of study at PVCC. Table 6 shows the evaluation of PVCC college transfer survey respondents of their academic preparation during the past eight years. College transfer survey respondents are those graduates receiving either the Associate of Arts (AA) or Associate of Science (AS) degrees.

TABLE 5: EVALUATION BY 1986-87 PVCC GRADUATE SURVEY RESPONDENTS OF THEIR ACADEMIC PREPARATION FOR COLLEGE TRANSFER BY PVCC CURRICULAR PROGRAM

PROGRAM	Excellent No.	Excellent Pct.	Good No.	Good Pct.	Fair No.	Fair Pct.	Poor No.	Poor Pct.
Liberal Arts	3	42.9%	4	57.1%	0	0.0%	0	0.0%
Fine Arts	2	66.7%	1	33.3%	0	0.0%	0	0.0%
A.A. DEGREE	5	50.0%	5	50.0%	0	0.0%	0	0.0%
Business Administration	3	50.0%	1	16.7%	2	33.3%	0	0.0%
Education	2	33.3%	3	50.0%	1	16.7%	0	0.0%
General Studies	1	20.0%	3	60.0%	1	20.0%	0	0.0%
Science	1	33.3%	1	33.3%	1	33.3%	0	0.0%
A.S. DEGREE	7	35.0%	8	40.0%	5	25.0%	0	0.0%
Accounting	0	0.0%	2	0.0%	0	0.0%	0	0.0%
Nursing	2	100.0%	0	0.0%	0	0.0%	0	0.0%
Police Science	1	100.0%	0	0.0%	0	0.0%	0	0.0%
A.A.S. DEGREE	3	60.0%	2	40.0%	0	0.0%	0	0.0%
Electronics Servicing	0	0.0%	1	100.0%	0	0.0%	0	0.0%
CERTIFICATE	0	0.0%	1	100.0%	0	0.0%	0	0.0%
TOTAL	15	41.7%	16	44.4%	5	13.9%	0	0.0%

Note that percentage figures are by row (program).

In addition to asking graduates to evaluate their overall academic preparation for college transfer, graduates are asked to evaluate aspects of that preparation. In comparison to students who started as freshmen at the four-year schools to which the survey respondents transferred, approximately 30% of the respondents claimed they were better prepared, approximately 50% claimed they were about as well prepared, and approximately 20% claimed they were less prepared. With respect to the quality of instruction at both PVCC and the senior institutions to which they transferred,

approximately one-half to two-thirds of all survey respondents claimed that the quality is the same at both institutions. A slightly higher percentage of the remaining respondents felt that quality was better at PVCC.

TABLE 6: EVALUATION BY PVCC AA/AS GRADUATE SURVEY RESPONDENTS OF THEIR ACADEMIC PREPARATION FOR COLLEGE TRANSFER

YEAR	Excellent No.	Pct.	Good No.	Pct.	Fair No.	Pct.	Poor No.	Pct.
1979-1980	6	35.3%	9	52.9%	2	11.8%	0	0.0%
1980-1981	8	33.3%	14	58.3%	2	8.3%	0	0.0%
1981-1982	11	37.9%	15	51.7%	3	10.3%	0	0.0%
1982-1983	10	34.5%	10	34.5%	9	31.0%	0	0.0%
1983-1984	(A follow-up survey was not conducted)							
1984-1985	10	43.5%	7	30.4%	6	26.1%	0	0.0%
1985-1986	11	39.3%	12	42.9%	5	17.9%	0	0.0%
1986-1987	12	40.0%	13	43.3%	5	16.7%	0	0.0%

Note that percentage figures are by row (year).

The majority of survey respondents felt that four-year schools imposed stricter grading practices than PVCC. The majority also felt that students were more competitive at four-year schools. On the other hand, the majority of survey respondents felt that faculty and staff were less friendly at four-year schools and less individual attention is paid to students at four-year schools.

OCCUPATIONAL/TECHNICAL EDUCATION OUTCOMES

GENERAL. Besides providing educational programs which lead toward the baccalaureate degree at four-year colleges and universities, PVCC offers a number of programs designed to furnish or upgrade occupational skills in various technical fields. A word of caution is in order, however. The distinction between college transfer education and occupational/technical education has blurred somewhat in recent years. A number of occupational/technical program graduates continue their education at four-year schools, and a number of college transfer program graduates seek employment in technical fields.

Occupational/technical program outcomes are assessed in several different ways at PVCC. Every three years, each academic program is reviewed by the college's Curriculum & Instruction (C&I) Committee. Additionally, each year both graduates and employers are asked to evaluate programs. Finally, in areas such as Nursing or Respiratory Therapy, which require graduates to pass national examinations in order to receive licenses, the results of these exams are reviewed.

ACADEMIC PROGRAM REVIEW. Each year, one-third of all academic programs at PVCC are formally reviewed by the C&I Committee. Using enrollment data, employer evaluations, graduate evaluations, advisory committee input, and faculty feedback, written evaluations are submitted to the dean of instruction by the appropriate division chair after the chair has received recommendations from the C&I Committee.

A recent study conducted by the Office of Institutional Research and Planning specifically addressed occupational/technical education at PVCC. *Occupational/Technical Programs at Piedmont Virginia Community College* (PVCC Institutional Research Report No. 3-89, April 1989) was intended to supplement the academic review process and to be used in conjunction with the annual graduate survey reports and employer survey reports published by the Office of Institutional Research and Planning.

Occupational/technical students typically constitute approximately one-third of all curricular students and FTES enrolled at PVCC.[6] Of these occupational/technical students, nearly one-third are enrolled in the Business and Management program. The next largest programs in terms of student enrollment are Nursing and Computer Information Systems. The two smallest programs are Arts and Crafts Production and Science Laboratory Technology. In terms of student completion, however, approximately two-thirds of all graduates receive degrees in occupational/technical areas. Occupational/technical students, in other words, are much more likely to complete their degrees or award programs than are college transfer students.

Generally, the growth rates for occupations for which PVCC occupational/ technical programs prepare workers were quite high. The only exception to this was the Mechanical Technology program, but occupational growth rates do not take into account the rise of CAD systems. Similarly, there seemed to be ample job opportunities in occupations for which PVCC occupational/technical programs prepare

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[6]One FTES, or full-time equivalent student, is generated for every 15 student credit hours.

workers. The only exception was the Respiratory Therapy program in which data compiled by the Virginia Employment Commission (VEC) indicated that there may be more graduates than jobs. This is misleading, however, because all PVCC respiratory therapy graduates have been able to find employment in the field of respiratory therapy, with many receiving more than one job offer.

EMPLOYER EVALUATION OF OCCUPATIONAL/TECHNICAL EDUCATION. In the annual employer survey conducted by the Office of Institutional Research and Planning, employers are asked to evaluate PVCC's occupational/technical education "in comparison to similar institutions."

As can be seen in Table 7, employers of PVCC graduates of the classes of 1984-85 and 1985-86 have consistently rated the college's occupational/technical education quite highly. The vast majority rated it as "GOOD (better than most)." Only a few employers have rated it as either excellent or poor.

TABLE 7: EMPLOYER EVALUATION OF OCCUPATIONAL/TECHNICAL EDUCATION AT PVCC

CATEGORY	EXCELLENT (one of the best ever) No.	Pct.	GOOD better than most) No.	Pct.	AVERAGE (about the same as most) No.	Pct.	POOR (worse than most) No.	Pct.
1984-85 Graduates	3	7.3%	27	65.9%	11	26.8%	0	0.0%
1985-86 Graduates	1	3.1%	25	78.1%	5	15.6%	1	3.1%
TOTAL	4	5.5%	52	71.2%	16	21.9%	1	1.4%

Employers are also asked to evaluate technical job skills of PVCC graduates, as well as work traits. These work traits are quality of work, quantity of work, attitude

toward work, cooperation with fellow workers, and cooperation with supervisors. The same rating scale used to evaluate occupational/technical education was employed. As can be seen in Table ?, employers have generally felt that PVCC graduates have excellent or good technical job skills and work traits. Only a few employers felt that PVCC graduates were poor in either technical job skills or work habits.

TABLE 8: EMPLOYER EVALUATION OF TECHNICAL SKILLS AND WORK TRAITS OF PVCC GRADUATES OF THE CLASSES OF 1984-85 AND 1985-86

CATEGORY	EXCELLENT (one of the best ever) No.	Pct.	GOOD better than most) No.	Pct.	AVERAGE (about the same as most) No.	Pct.	POOR (worse than most) No.	Pct.
Technical job skills	20	21.3%	55	58.5%	17	18.1%	2	2.1%
Quality of work	27	28.7%	46	48.9%	20	21.3%	1	1.1%
Quantity of work	22	23.4%	45	47.9%	25	26.6%	2	2.1%
Attitude toward work	37	39.4%	36	38.3%	17	18.1%	4	4.3%
Cooperation with fellow workers	41	43.6%	32	34.0%	19	20.2%	2	2.1%
Cooperation with supervisors	43	45.7%	31	33.0%	17	18.1%	3	3.2%

GRADUATE EVALUATION OF OCCUPATIONAL/TECHNICAL EDUCATION. As can be seen in Table 9, approximately 60% of all graduates from PVCC during the past decade were employed in full-time jobs related to their fields of study at PVCC. The figure is even higher for occupational/technical graduates. Between 70-85% of all graduates receiving the AAS degree, certificates, or diplomas were employed in full-time jobs related to their fields of study at the college. Between 5-10% of all occupational/technical graduates were employed part-time, and between 5-10% were un-

employed. Very few unemployed occupational/technical graduates were actually seeking employment.

TABLE 9: EMPLOYMENT STATUS OF PVCC GRADUATE SURVEY RESPONDENTS BY DEGREE

YEAR/DEGREE	Employed Full-Time Related Field		Employed Full-Time Unrelated Field		Employed Part-Time Related Field		Employed Part-Time Unrelated Field		Not Employed Seeking Job		Not Employed Not Seeking Job	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
1979-1980												
AA/AS	4	10.8%	11	29.7%	4	10.8%	9	24.3%	0	0.0%	9	24.3%
AAS	41	73.2%	8	14.3%	7	12.5%	0	0.0%	0	0.0%	0	0.0%
Diploma/Certificate	4	50.0%	1	12.5%	1	12.5%	0	0.0%	1	12.5%	1	12.5%
TOTAL	49	48.5%	20	19.8%	12	11.9%	9	8.9%	1	1.0%	10	9.9%
1980-1981												
AA/AS	5	12.8%	8	20.5%	3	7.7%	7	17.9%	3	7.7%	13	33.3%
AAS	33	58.9%	13	23.2%	5	8.9%	1	1.8%	4	7.1%	0	0.0%
Diploma/Certificate	8	61.5%	2	15.4%	1	7.7%	0	0.0%	1	7.7%	1	7.7%
TOTAL	46	42.6%	23	21.3%	9	8.3%	8	7.4%	8	7.4%	14	13.0%
1981-1982												
AA/AS	10	19.2%	6	11.5%	1	1.9%	12	23.1%	2	3.8%	21	40.4%
AAS	44	63.8%	12	17.4%	5	7.2%	4	5.8%	2	2.9%	2	2.9%
Diploma/Certificate	10	66.7%	3	20.0%	0	0.0%	0	0.0%	2	13.3%	0	0.0%
TOTAL	64	47.1%	21	15.4%	6	4.4%	16	11.8%	6	4.4%	23	16.9%
1982-1983												
AA/AS	8	18.6%	9	20.9%	1	2.3%	11	25.6%	1	2.3%	13	30.2%
AAS	60	84.5%	4	5.6%	3	4.2%	0	0.0%	2	2.8%	2	2.8%
Diploma/Certificate	5	50.0%	3	30.0%	1	10.0%	0	0.0%	0	0.0%	1	10.0%
TOTAL	73	58.9%	16	12.9%	5	4.0%	11	8.9%	3	2.4%	16	12.9%
1983-1984	(A follow-up survey was not conducted for the class of 1983-1984)											
1984-1985												
AA/AS	7	21.2%	4	12.1%	3	9.1%	4	12.1%	3	9.1%	12	36.4%
AAS	46	71.9%	5	7.8%	8	12.5%	0	0.0%	4	6.3%	1	1.6%
Diploma/Certificate	20	76.9%	3	11.5%	0	0.0%	0	0.0%	1	3.8%	2	7.7%
TOTAL	73	59.3%	12	9.8%	11	8.9%	4	3.3%	8	6.5%	15	12.2%
1985-1986												
AA/AS	4	10.0%	9	22.5%	4	10.0%	4	10.0%	6	15.0%	13	32.5%
AAS	55	77.5%	5	7.0%	2	2.8%	2	2.8%	2	2.8%	5	7.0%
Diploma/Certificate	23	85.2%	2	7.4%	2	7.4%	0	0.0%	0	0.0%	0	0.0%
TOTAL	82	59.4%	16	11.6%	8	5.8%	6	4.3%	8	5.8%	18	13.0%
1986-1987												
AA/AS	12	24.0%	6	12.0%	6	12.0%	7	14.0%	4	8.0%	15	30.0%
AAS	51	85.0%	1	1.7%	2	3.3%	2	3.3%	2	3.3%	2	3.3%
Diploma/Certificate	19	73.1%	4	15.4%	2	7.7%	0	0.0%	1	3.8%	0	0.0%
TOTAL	82	60.3%	11	8.1%	10	7.4%	9	6.6%	7	5.1%	17	12.5%

Note that percentage figures are by row (award).

Job satisfaction of PVCC graduates is typically quite high. Approximately 90% of all PVCC graduates during the past decade have either been very satisfied or satisfied with their jobs. Most have also intended to pursue those jobs as long-range careers. Two-thirds of all PVCC graduates planned to continue within the same career fields in which they were employed.

The preparation for jobs and careers provided by PVCC is usually rated quite highly by graduate survey respondents. Typically, as can be seen in Table 10, one-third of all graduates rate their academic preparation at PVCC as excellent, and two-thirds rate it as good. Very few rate it as either fair or poor.

TABLE 10: EVALUATION BY PVCC GRADUATE SURVEY RESPONDENTS OF THEIR ACADEMIC PREPARATION BY PVCC FOR EMPLOYMENT

YEAR/DEGREE	Excellent No.	Excellent Pct.	Good No.	Good Pct.	Fair No.	Fair Pct.	Poor No.	Poor Pct.
1979-1980								
AA/AS			(not available)					
AAS	18	34.0%	27	50.9%	7	13.2%	1	1.9%
Diploma/Certificate	2	50.0%	1	25.0%	1	25.0%	0	0.0%
TOTAL	20	35.1%	28	49.1%	8	14.0%	1	1.8%
1980-1981								
AA/AS			(not available)					
AAS	20	41.7%	17	35.4%	11	22.9%	0	0.0%
Diploma/Certificate	2	25.0%	3	37.5%	3	37.5%	0	0.0%
TOTAL	22	39.3%	20	35.7%	14	25.0%	0	0.0%
1981-1982								
AA/AS			(not available)					
AAS	20	36.4%	23	41.8%	11	20.0%	1	1.8%
Diploma/Certificate	2	20.0%	5	50.0%	3	30.0%	0	0.0%
TOTAL	22	33.8%	28	43.1%	14	21.5%	1	1.5%
1982-1983								
AA/AS			(not available)					
AAS	18	27.3%	31	47.0%	16	24.2%	1	1.5%
Diploma/Certificate	0	0.0%	4	66.7%	2	33.3%	0	0.0%
TOTAL	18	25.0%	35	48.6%	18	25.0%	1	1.4%
(A follow-up survey was not conducted for the class of 1983-1984)								
1984-1985								
AA/AS	6	35.3%	6	35.3%	5	29.4%	0	0.0%
AAS	19	33.3%	31	54.4%	7	12.3%	0	0.0%
Diploma/Certificate	5	41.7%	4	33.3%	3	25.0%	0	0.0%
TOTAL	30	34.9%	41	47.7%	15	17.4%	0	0.0%
1985-1986								
AA/AS	4	25.0%	9	56.3%	2	12.5%	1	6.3%
AAS	21	33.9%	38	61.3%	3	4.8%	0	0.0%
Diploma/Certificate	6	25.0%	17	70.8%	1	4.2%	0	0.0%
TOTAL	31	30.4%	64	62.7%	6	5.9%	1	1.0%
1986-1987								
AA/AS	11	35.5%	17	54.8%	0	0.0%	3	9.7%
AAS	20	37.7%	32	60.4%	1	1.9%	0	0.0%
Diploma/Certificate	9	34.6%	14	53.8%	3	11.5%	0	0.0%
TOTAL	40	36.4%	63	57.3%	4	3.6%	3	2.7%

Note that percentage figures are by row (award).

PVCC graduate survey respondents also typically feel that, in terms of academic preparation, they are either better prepared or equally prepared in comparison to other

employees within the same jobs and career fields. During the past decade, approximately half have felt they were better prepared, and half have felt they were about as well prepared. Very few have felt they were not as well prepared.

HEALTH OCCUPATIONS NATIONAL TEST RESULTS. Generally, graduates of PVCC's nursing program have performed well on the state board of nursing licensure examinations. As can be seen in Table 11, until 1987, PVCC graduates performed better than other nursing candidates in Virginia. Examination results in 1987 were disappointing. PVCC graduates performed worse on the average than other nursing candidates in Virginia. There was an improvement in scores between 1987 and 1988. In 1988, PVCC graduates performed slightly better than other Virginia nursing candidates.

Graduates of PVCC's respiratory therapy program have scored much higher on the registry examinations administered by the National Board of Respiratory Care than other candidates

TABLE 11: STATE BOARD OF NURSING OF VIRGINIA LICENSURE EXAMINATION RESULTS

	No. Candidates	Mean Score	Low Score	High Score	No. Passing	Pct. Passing
1985						
PVCC Candidates	44	2049.8	1528	2997	43	97.7%
Virginia Candidates	1,601	2003.2	1039	3200	1,436	89.7%
1986						
PVCC Candidates	41	2047.1	1584	2610	40	97.6%
Virginia Candidates	1,486	2005.9	1122	3200	1,365	91.9%
1987						
PVCC Candidates	39	1897.7	1371	2890	30	76.9%
Virginia Candidates	1,265	2012.3	1147	3116	1,157	91.5%
1988						
PVCC Candidates	41	1969.3	1261	2791	34	82.9%
Virginia Candidates	1,316	1947.2	864	3200	1,086	82.5%

SOURCE: State Board of Nursing of Virginia.

throughout the nation. Between 1983 and 1988, for entry level respiratory therapists, the national composite percentage figure was 77.1%; the PVCC composite percentage figure was 93.8%. Between 1976 and 1987, with respect to the written registry, the national composite percentage figure was 60.4%; the PVCC composite percentage figure was 73%. Between 1979 and 1987, for clinical simulation, the national composite percentage figure was 59.5%; the PVCC composite percentage figure was 68.6%.

GENERAL EDUCATION OUTCOMES

GENERAL. PVCC has adopted multiple measures for assessing general education outcomes. As noted in the Plan, "a multiple measure approach to assessment . . . [would] ideally include a nationally normed standardized test, locally developed measures of specific general education objectives, and surveys of graduates and employers."[7] Members of the Student Outcomes Assessment Committee have found that general education is probably the most difficult area to effectively assess. Still, a number of efforts have been made, some more successful than others.

Two nationally normed tests, the ACT Comp and a pilot version of the ETS Profile, have been administered to PVCC students. The PVCC faculty was surveyed to determine how frequently the college's general education objectives were covered in college courses. Annual graduate and employer surveys have yielded information concerning the general education component of the college's curriculum. An interdisciplinary humanities course has been developed and offered at PVCC. According to an independent consultant, the course has been quite successful.

GENERAL EDUCATION OBJECTIVES. In 1984, PVCC published a document entitled *General Education*.[8] In essence, this document consisted of a "statement

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[7]PVCC *Student Assessment Plan, p. 17.*

[8]Position Paper Number One (Charlottesville: Piedmont Virginia Community College, September 1984).

upholding general education as an integral part of the education of all its students, regardless of their ultimate professional objectives." [9] The "statement" itself consisted of a brief rationale for general education followed by 17 general education objectives. Because of its importance, the entire statement is listed below:

> As an institution committed to offering its students the strongest possible post-secondary education, Piedmont Virginia Community College subscribes to the following statement upholding general education as an integral part of the education of all its students, regardless of their ultimate professional objectives. Accordingly, the College will create on its campus, both as part of its course offerings and outside of the classroom, an environment which encourages the student body to benefit from the experiences inherent in general education.
>
> As citizens in a democratic and technological society, we must acquire more than mere training for a vocation or profession. To function effectively, we must acquire a general education. A good general education enables us to comprehend changing knowledge and to solve problems, whether they be occupational, professional, social, or personal. Such ways of thinking rarely develop in occupational or professional training alone.
>
> The following list embodies the essence of a general education by specifying the primary values and abilities fostered by each discipline. The list is intended as an ideal to work toward in occupational programs and in transfer curricula. The College will strive to help each student realize this set of values.
>
> **To develop skills in obtaining and using information: how to read and work through a set of facts, how to recognize contradictory statements, what to do with these contradictions, and how to think logically.**
>
> **To present conclusions in an orderly and intelligible fashion, in writing and in speech;**
>
> **To experience a diversity of human behavior and thought;**
>
> **To develop appreciation for the arts; to sharpen all the senses and learn to make aesthetic judgments;**
>
> **To think creatively, solving problems by imagining what might be, encouraging thought from the known to the unknown;**

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[9] *Ibid.*, p. 3.

To imagine solutions to problems and to work toward solving them both systematically and intuitively;

To become more deeply aware of how language functions;

To develop an understanding and appreciation of how scholars in a particular field work;

To begin to develop skills in the kinds of questions to ask, and to acquire vocabularies necessary to specific fields through acquaintance with methods of inquiry;

To understand science and mathematics as an intrinsic part of the culture;

To have some understanding of social and economic issues raised by scientific research and technological development;

To have at least some exposure to non-Western , non-White, and non-male perspectives;

To achieve a world view, through the study of other cultures;

To develop the body, through physical education, testing its limits and learning new skills, in order to bring mind and body into a graceful and harmonious unity;

To develop a feeling for the excitement of learning itself;

To learn to make ethical judgments.

And finally, to establish a life-long process of intellectual and cultural growth.[10]

ACT COMP TEST. During May 1987, PVCC administered American College Testing's College Outcome Measures Program (ACT COMP) Objective Test to 24 student volunteers, all of whom were sophomores, and 8 college faculty volunteers. The purpose for administering the test was to determine whether it provides an

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[10]*Ibid.*, pp. 3-4. The actual "statement," printed above, is preceded by a two page introduction which "examine[s] briefly the concept of general education."

accurate measure of general education outcomes. Support was provided by a state grant.

The test itself consisted of six subsections: (1) Functioning in Social Institutions; (2) Using Science; (3) Using the Arts; (4) Communicating; (5) Solving Problems; and (6) Clarifying Values.

Results of the test are shown in Figure 3.

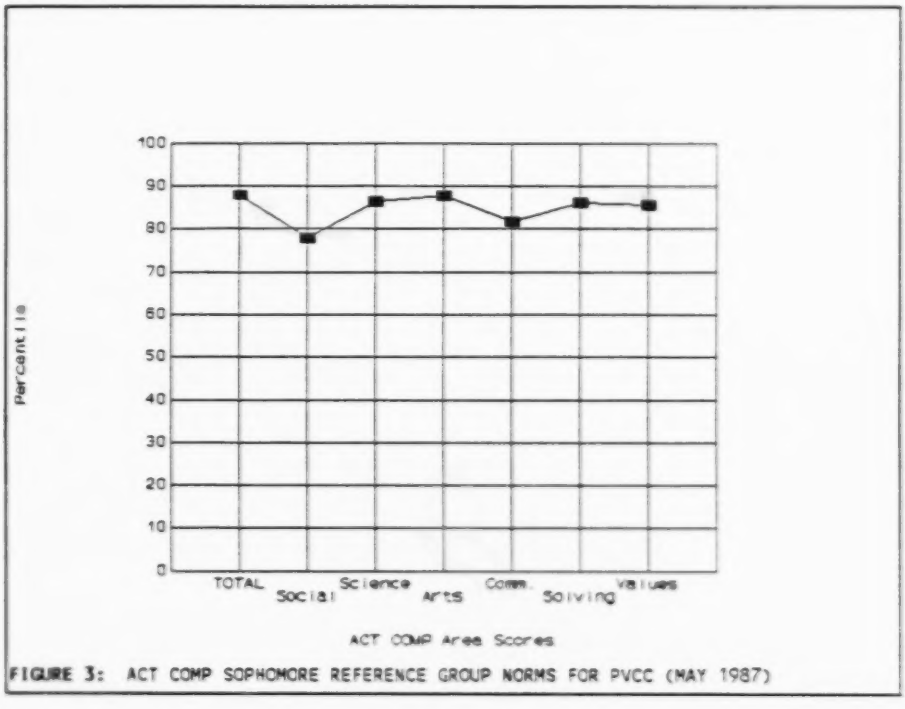

FIGURE 3: ACT COMP SOPHOMORE REFERENCE GROUP NORMS FOR PVCC (MAY 1987)

The average sophomore at PVCC socred at the 88th percentile on total score as compared to national sophomore norms. Mean scores for subtests ranged from the 82nd to the 88th percentiles.

The student sample size was too small to allow meaningful generalization to all sophomores at PVCC. Also, according to ACT, it is "likely that such a small, volunteer

sample provided an overestimate of levels of proficiency for sophomores [at PVCC]." [11] The ACT Program noted that if the sample had been comparable to all sophomores at PVCC, "the obtained exiting levels of proficiency in general skills and knowledge would compare quite favorably with sophomores generally participating in COMP." [12]

TABLE 12: PVCC STUDENT REACTIONS TO THE ACT COMP TEST (MAY 1987)

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Not Applicable
The ACT COMP measures knowledge and skills which will be useful to me in my current or future career	0.0%	42.9%	21.4%	0.0%	28.6%	7.1%
The ACT COMP is a good measure of the things which I have studied at PVCC	0.0%	14.3%	78.6%	7.1%	0.0%	0.0%
The ACT COMP measures knowledge and skills which will be generally useful to me	0.0%	50.0%	21.4%	0.0%	28.6%	0.0%
I feel pretty good about the way I performed on the ACT COMP	0.0%	42.9%	14.3%	0.0%	42.9%	0.0%
The courses I have taken at PVCC have adequately addressed the knowledge and skills measured by the ACT COMP	0.0%	7.1%	92.9%	0.0%	0.0%	0.0%

	Yes	No	No Answer
The ACT COMP should be used as a test for all students graduating from PVCC	14.3%	78.6%	7.1%

All students and faculty who took the ACT COMP were surveyed to determine their reaction to the test. For the most part, the reaction was negative. Results from the student survey are shown in Table 3. Although the majority of students agreed that

[11] *Report of Results for Piedmont Virginia Community College on Use of the COMP Objective Test (Form VIII Equated to III)*, American College Testing Program, College Outcome Measures Program, 20 July 1987, p. 2.

[12] *Ibid.*, p. 2.

the ACT COMP measured useful knowledge and skills, most did not feel that it was "a good measure of the things . . . studied at PVCC," and most disagreed with the following statement: "The courses which I have taken at PVCC have adequately addressed the knowledge and skills measured by the ACT COMP." Eleven of the fourteen students responding to the survey did not recommend that the ACT COMP be used as a test for all students graduating from PVCC.

Based partly on the negative reaction to the ACT COMP, PVCC's ad hoc committee on student outcomes assessment recommended to the dean of instruction in early 1988 that the college explore other tests designed to measure general education outcomes.

ETS PROFILE TEST. The Academic Profile, jointly sponsored by the College Board and the Educational Testing Service (ETS), is an objective test designed to measure four major academic skill areas (college-level reading, college-level writing, critical thinking, and using mathematical data) in the context of three major discipline areas (humanities, social sciences, and natural sciences). PVCC was one of several Virginia community colleges which participated in the initial pilot year project for the Academic Profile. In May 1988, 72 students were administered the short form of the test which consists of approximately fifty minutes of testing time. Slightly over half of the students were sophomores, approximately one-third were freshmen, and the remainder classified themselves as juniors, seniors, or "other."

Results of the ETS Academic Profile by academic area subscores, as well as by skills dimension subscores, are presented in Table 3. Scores in this table are shown as the mean, or average, percent of correct responses. In other words, the 72 students at PVCC who took the test received correct answers on 55% of all questions. This compared favorably to national figures. Seventy-three percent of all freshmen who took the test scored below the range 51-55, and 38% of all sophomores scored below the range 51-55.

TABLE 13: RESULTS OF THE ETS ACADEMIC PROFILE (SHORT FORM) FOR PVCC (MAY 1988)

	Mean Pct. Correct
ACADEMIC AREA SUBSCORES	
Humanities	57
Social Sciences	56
Natural Sciences	53
SKILLS DIMENSION SUBSCORES	
College Level Reading	62
College Level Writing	59
Critical Thinking	51
Using Mathematical Data	50
TOTAL SCORE	55

A final determination as to the applicability of the ETS Profile has not been made. Because the ETS Profile was a pilot program, PVCC is waiting for further results and information before making any decision.

FACULTY ASSESSMENT OF GENERAL EDUCATION OBJECTIVES. In the winter of 1988, a survey listing 22 general education objectives was developed and distributed to all PVCC full-time and part-time faculty. Nearly two-thirds of all full-time teaching faculty at the college (63%) returned completed survey forms. The purpose of the survey was to determine the extent to which the general education objectives listed in *General Education* (PVCC Position Paper Number One, September 1984) were actually being included in classroom teaching and in instructional programs.[13]

Major conclusions were:

1. Most of the objectives were clear to teaching faculty at PVCC. In fact, half of all the general education objectives were completely clear to all faculty (nobody indicated that these were unclear). The least clear objective was objective 19 (To develop the body, though physical education, testing its limits and learning new skills, in order to bring mind and body into a graceful and harmonious unity). In 10 classes (or 4.9% of all classes), this objective was reported to be unclear.

2. There seemed to be general agreement that most of the objectives were appropriate to the courses taught at the college.

3. When the results of all general education objectives are considered by instructional division, the greatest coverage of general education objectives as a percent of total courses occurred in the Division of Humanities and Social Sciences. This is not a surprising conclusion given the nature of the objectives, many of which tend to reflect

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[13]Results of the survey were published in *PVCC Faculty Assessment of General Education Objectives* by David L. Priddy and Ronald B. Head (PVCC Research Report No. 7-88, October 1988).

values inherent in the humanities and social sciences. The second highest level of coverage of general education objectives as a percent of total courses occurred in the Division of Health Technologies.

4. There appeared to be no major differences in the coverage of the general education objectives between full-time and part-time faculty.

EMPLOYER EVALUATION OF GENERAL EDUCATION. In the annual employer survey conducted by the Office of Institutional Research and Planning, employers are asked to evaluate PVCC's general education "in comparison to similar institutions."

As can be seen in Table 14, employers of PVCC graduates of the classes of 1984-85 and 1985-86 have consistently rated the college's general education quite highly. The vast majority rated general education at PVCC as "GOOD (better than most)." Only a few employers have rated it as either excellent or poor.

TABLE 14: EMPLOYER EVALUATION OF GENERAL EDUCATION AT PVCC

CATEGORY	EXCELLENT (one of the best ever) No.	Pct.	GOOD better than most) No.	Pct.	AVERAGE (about the same as most) No.	Pct.	POOR (worse than most) No.	Pct.
1984-85 Graduates	1	3.1%	19	59.4%	11	34.4%	1	3.1%
1985-86 Graduates	1	3.1%	25	78.1%	5	15.6%	1	3.1%
TOTAL	2	3.1%	44	68.8%	16	25.0%	2	3.1%

Employers are also asked to evaluate general education skills of PVCC graduates. These general education skills are

TABLE 15: EMPLOYER EVALUATION OF GENERAL EDUCATION SKILLS OF PVCC GRADUATES OF THE CLASSES OF 1984-85 AND 1985-86

CATEGORY	EXCELLENT (one of the best ever) No.	Pct.	GOOD better than most) No.	Pct.	AVERAGE (about the same as most) No.	Pct.	POOR (worse than most) No.	Pct.
Math skills	11	13.1%	40	47.6%	33	39.3%	0	0.0%
Writing skills	10	11.5%	37	42.5%	38	43.7%	2	2.3%
Speaking skills	15	17.2%	36	41.4%	33	37.9%	3	3.4%
Research skills	12	19.4%	30	48.4%	19	30.6%	1	1.6%
Logic skills	17	19.1%	43	48.3%	26	29.2%	3	3.4%

math, writing, speaking, research, and logic. The same rating scale used to evaluate general education was employed. As can be seen in Table 15, employers have generally felt that PVCC graduates are highly skilled in these areas. From one-half to two-thirds of employers of 1984-85 and 1985-86 PVCC graduates believed that the general education skills of the graduates were either excellent or good. Only a few employers felt that PVCC graduates were poor in any of these skills.

HUMANITIES. PVCC was awarded a grant by the National Endowment for the Humanities (NEH) in 1988-89 to (1) establish an interdisciplinary "core" humanities course, and (2) increase the entire faculty's experience of the humanities. The humanities project received a very positive evaluation from NEH in March 1989. As the evaluator, Ted Rabb, commented

> Piedmont's commitment to the humanities, and its insistence that they be required in every curriculum in the catalog, should be the envy of community colleges throughout the country. There are few institutions I have seen where acceptance of these "irrele-

vant" subjects is so widespread, and where their reception by students is so enthusiastic.[14]

One of the strengths of the project, according to Mr. Rabb, is that students in the interdisciplinary course have received a broadening and enlightening experience. Methodologically, however, Mr. Rabb reported that the course needs to be strengthened so that faculty from different disciplines not merely provide information to students but challenge them with different and sometimes conflicting perspectives. Logistically, Mr. Rabb noted that more clerical support would be helpful. "With these small exceptions," he concluded, "one must applaud the achievements of Professor Edson, the humanities task force, the teachers of the 'core' course, and the faculty and administration at Piedmont in general." [15]

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[14]Ted Rabb, Report on Evaluation Visit to Piedmont Virginia Community College--March 29-31, 1989, unpublished report from the National Endowment for the Humanities, 1989, p. 1.

[15]*Ibid.*, p. 2. Dr. Evelyn Edson, Professor of History at PVCC, is the director of the NEH project.

DEVELOPMENTAL EDUCATION OUTCOMES

GENERAL. All curricular students and all students planning to enroll in mathematics or English courses are required to complete an assessment program prior to registration. The program is designed to assess current levels of skill in reading, writing, and mathematics. It also provides assistance in developing career and life plans. Specific assessment measures include:

1. the Nelson-Denny Reading Test for reading placement;
2. the Northern Virginia English Qualifying Exam (NOVA), Form A, for English placement;
3. the Descriptive Test of Mathematics Skills for math placement.

At the end of each developmental class, students complete alternate forms of the placement examinations to measure progress in the course and to assess qualifications for exit to college level courses. In English writing classes, students also complete a writing sample in their first class to verify placement and to assess beginning writing skills.

A tracking system which follows the progress of all students requiring remediation has been developed and is now being implemented. Additionally, two studies on developmental studies were conducted by the Office of Institutional Research and Planning, one dealing with developmental students in general and the other dealing with

developmental reading and writing;[16] statistics showing student progress in developmental mathematics have been collected by the math department at PVCC; and finally, a study on writing samples should be completed during the 1989-90 academic year.

DEVELOPMENTAL READING AND WRITING. In January 1984, PVCC began recording the assessment scores of students being tested in reading and writing. Between January 1984 and the summer of 1988, 1,960 students were assessed using the Northern Virginia English Qualifying Exam (Form A) for writing and the Nelson-Denny Reading Test (Form E) for reading. This and other data pertaining to developmental reading and writing at PVCC were analyzed by Bettye Walsh, Assistant Professor of English and Developmental Studies at PVCC, and Ronald Head, Director of Institutional Research and Planning at PVCC, and the results published in *Developmental Reading and Writing at Piedmont Virginia Community College*.[17] The study contained information on reading and writing assessment in general, developmental assessment scores compared to grades in selected content courses, developmental course completion compared to grades in selected content courses, and assessment scores and progress in developmental courses.

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[16]See Ronald B. Head, *A Snapshot of Developmental Studies at Piedmont Virginia Community College: Fall Quarter 1987* (PVCC Institutional Research Report No. 2-88, February 1988) and Bettye Walsh and Ronald B. Head, *Developmental Reading and Writing at Piedmont Virginia Community College* (PVCC Institutional Research Report No. 4-88, July 1988).

[17]*Op. Cit.*

As can be seen in Figure 4, 879 of the 1,960 students assessed scored below 24 (the cutoff score) on the English Qualifying Exam, and 297 scored below the 10th grade reading level (the cutoff score on the Nelson-Denny Reading Test).

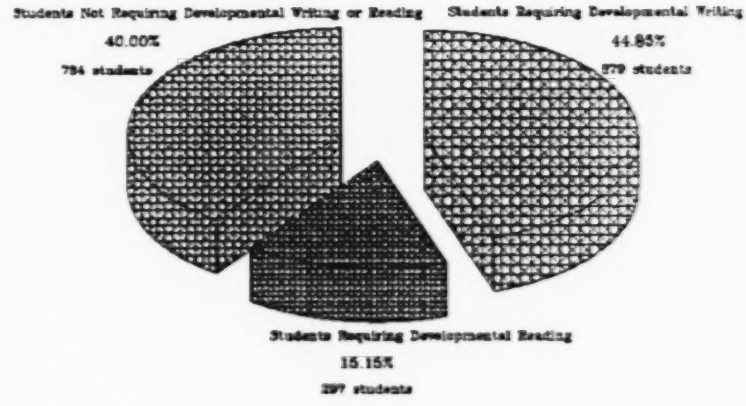

FIGURE 4: PVCC STUDENT ASSESSMENT INTO DEVELOPMENTAL WRITING AND READING (1984-1987)

The results were somewhat surprising. Because of the perception that there is a strong relationship between reading and writing, one might have expected approximately the same percentage of students to require remedial reading as required remedial writing. However, only one-third as many students at PVCC scored below the cutoff score in reading assessment as scored below the cutoff score in writing assessment. Approximately 15% of the students required developmental reading, while approximately 45% required developmental writing.[18] One must assume that area high schools prepare students better in reading than they do in writing, the cutoff scores used by PVCC are inappropriate, or there really is not as strong a relationship between reading and writing as might be expected.

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[18]A large percentage of the 297 students requiring developmental reading also required developmental writing.

Several interesting questions arose from these figures:

(1) Why was the need for remediation in reading so low at PVCC? Are the cutoff score too low?

(2) In light of the fact that between 45%-60% of all students tested required either (or both) developmental reading or developmental writing, did the college have a larger number of academic high risk students than realized? If so, should the college offer these students more than just a developmental class?

(3) Should data on the number of students assessed and the results of this assessment become available on a semester basis? If so, what is the best way to maintain and report such data, and who should be responsible for doing this?

Clearly, further study was indicated, and action was taken immediately. A developmental studies task force was appointed during the 1988-89 academic year, and a report from that task force is expected shortly. Also during the 1988-89 academic year, the first phase of the developmental tracking system was implemented. This phase allows tracking of students enrolled in developmental courses.

Preliminary analysis reveals that students enrolled in developmental writing courses make significant gains in writing skills by taking developmental writing at PVCC. As can be seen in Table 16, a correlated pairs t-test of student scores on pre- (NOVA Form A) and post-tests (NOVA Form B) showed that the gain in scores between the two tests was statistically significant at the .01 level of

TABLE 16: RESULTS OF CORRELATED T-TEST FOR PVCC STUDENTS IN DEVELOPMENTAL WRITING CLASSES USING THE NOVA ENGLISH QUALIFYING EXAMINATION

	NUMBER STUDENTS	MEAN	STANDARD DEVIATION
Pre-Test	72	30.2361	6.42945
Post-Test	72	32.7500	6.83353
T-STATISTIC:		3.80108	
DEGREES OF FREEDOM:		71	
ONE-TAILED PROBABILITY:		0.0002	
TWO-TAILED PROBABILITY:		0.0003	

significance. In other words, the gain in scores was probably not the result of chance alone, but rather the result of instruction in developmental writing. It will be interesting to see, as the developmental tracking system becomes more sophisticated, whether the findings of *Developmental Reading and Writing at Piedmont Virginia Community College* are replicated. It will also be interesting to see whether the cutoff scores on the various developmental tests are valid.

DEVELOPMENTAL WRITING SAMPLES. Because teachers of writing firmly agree that to assess writing students must actually write, developmental students at PVCC are required to submit entry and exit writing samples. A portion of these writing samples are randomly selected and holistically scored by PVCC English faculty to determine student progress in writing. English faculty also review randomly selected student writing portfolios to determine writing progress in general and writing progress specifically in certain subskill areas.

At the end of their second semester in writing courses, students complete a survey which provides the opportunity for them to express their perception of their own writing progress. At the same time, on a voluntary basis, students are interviewed. The purpose of the interview is to reinforce the survey. Faculty also complete a survey. Finally, certain randomly selected writing samples from the first and second semesters are compared to assess how much students have improved their writing skills.

A preliminary analysis of the holistically scored writing samples indicates that 25 students improved significantly between their first and second samples. No significant improvement was noted for six students, and five students actually performed worse on the second sample than on the first. Further analyses will be conducted and the results should be published in an institutional research study during the 1989-90 academic year.

DEVELOPMENTAL MATHEMATICS. As indicated by scores on different versions of the mathematics assessment tests administered to students in developmental mathematics classes during Fall Semester 1988, students made considerable progress between the time they enrolled in the classes and the time they completed them. As can be seen in Table 17, the average score upon entry into developmental math classes was 13.64 out of a possible maximum total of 30; the average score upon exit was 24.53. In other words, the average score nearly doubled between the time students enrolled in developmental math and the time they completed developmental math. Since the cutoff scores for the mathematics assessment tests are on the order of 16, the post-test scores were for the most part well above the level for entrance into credit courses.

TABLE 17: RESULTS OF CORRELATED T-TEST FOR PVCC STUDENTS IN DEVELOPMENTAL MATHEMATICS CLASSES USING MATHEMATICS SKILLS TESTS

	NUMBER STUDENTS	MEAN	STANDARD DEVIATION
Pre-Test	75	13.6400	5.02330
Post-Test	75	24.5333	5.73593
T-STATISTIC:		12.0961	
DEGREES OF FREEDOM:		74	
ONE-TAILED PROBABILITY:		0.0000	
TWO-TAILED PROBABILITY:		0.0000	

A correlated pairs t-test of the same data revealed a statistical difference at the .01 level of significance. In other words, the large gain in scores was probably not due to chance alone, but rather was due to instruction in developmental math. As is the case with both developmental reading and writing, further work needs to be done to validate cutoff scores on developmental mathematics tests.

NON-RETURNING STUDENTS

In previous sections of this report, frequent allusion has been made to students either not returning to PVCC from one term to another or students not completing their academic programs of study. For instance, the studies of academic performance of PVCC transfers to the University of Virginia have included both graduates and non-graduates.

PVCC monitors retention closely. Each year the Office of Institutional Research and Planning conducts a study to provide quarterly retention rates according to a variety of institutional and student characteristics and to determine whether major differences exist between returning and non-returning students according to these characteristics.[19] With respect to long-term retention trends, an examination of retention rates during the past five years has revealed the following:

1. Retention rates between Winter Quarter and Spring Quarter are higher than retention rates between Fall Quarter and Winter Quarter.

2. Slightly over half of all students enrolled during one quarter re-enroll at PVCC and complete the subsequent quarter.

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[19]See Ronald B. Head, *Quarterly Student Retention at Piedmont Virginia Community College: 1987-1988* (PVCC Institutional Research Report No. 10-88, November 1988); Ronald B. Head, *Quarterly Student Retention at Piedmont Virginia Community College: 1986-1987* (PVCC Institutional Research Report No. 8-87, November 1987); and Ronald B. Head, *Quarterly Student Retention at Piedmont Virginia Community College: 1985-1986* (PVCC Institutional Research Report No. 4-86, November 1986). Note that the term *retention rate*, as used in these studies, refers to the percentage of students during one quarter who re-enroll during the subsequent quarter. In other words, the full-time student retention rate between fall 1987 and winter 1988 was the percentage of full-time students enrolled during Fall Quarter 1987 who returned to PVCC and completed Winter Quarter 1988.

3. Between 80% and 90% of all full-time students enrolled during one quarter re-enroll at PVCC and complete the subsequent quarter.

4. Approximately two of every three curricular students enrolled during one quarter re-enroll at PVCC and complete the subsequent quarter.

5. The retention rate for freshmen ranges from approximately 60-70% and for sophomores from approximately 70-80%.

6. Part-time students who return to PVCC from one term to the next are usually enrolled in programs leading toward degrees and study on the main campus during the day. Part-time students who do not return are usually non-curricular students who study off-campus during the evening.

Finally, with respect to non-returning students, during Spring Semester 1989, in-depth, open-ended interviews with 15 non-returning students and 5 current students were conducted. An effort was made to select former students from different geographic locations, different age groups, and different racial groups, as well as to select an equal number of males and females. Results of this project will soon be published by the Office of Institutional Research and Planning, and a summary will be included in the next assessment study.

CONCLUSIONS

Piedmont Virginia Community College has made considerable progress in implementing its student assessment plan. All of the activities in the Plan have been started, and many have been accomplished, some with more success than others.

The college maintains current information concerning characteristics of entering students; it also maintains a great deal of information on what happens to these students once they leave PVCC. Educational outcomes by academic program are fairly well documented, though sometimes information is not as current as it could be.

Some progress had been made in assessing general education outcomes, but this has been the most difficult area of the Plan to implement. Further efforts are needed to identify tests, classroom techniques, or other measures which accurately assess these outcomes. Progress has also been made in assessing developmental education outcomes. The developmental tracking system, however, is only in its initial phase and additional data are required to accurately assess the outcomes of remedial course work.

Most of the information in this document has already been shared with the faculty and staff of PVCC. However, to insure that everybody is informed about the college's student assessment outcomes, this report will be shared with all faculty during Fall Semester 1989 orientation week in mid-August 1989. At that time, an opportunity will be provided for an in-depth presentation and discussion of student outcomes assessment.

The following timetable summarizes how PVCC will continue implementation of its student assessment plan during the next two years.

DATE	ACTIVITY	PERSON
Summer 1989	*Employer Survey Results for the PVCC Graduating Class of 1986-1987* published and distributed to all faculty and staff.	Coordinator of Institutional Research.
	Follow-up Survey of PVCC Graduates of the Class of 1987-1988 published and distributed to all faculty and staff.	Coordinator of Institutional Research.
August 1989	Special presentation to the faculty during orientation week on implementation of PVCC's student assessment plan. Copies of *Piedmont Virginia Community College Student Assessment Report* distributed.	Dean of Instruction; Chair, Student Assessment Committee; Coordinator of Institutional Research.
Fall 1989	*PVCC Students Transferring to Senior Virginia Public Colleges and Universities: 1988-1989* published and distributed to all faculty and staff.	Coordinator of Institutional Research.
	PVCC "Market Share" of Selected High Schools--Graduating Class of 1988 published and distributed to all faculty and staff.	Coordinator of Institutional Research.
	Results of survey of non-returning students to PVCC from Fall Semester 1988 to Spring Semester 1989 published and distributed to all faculty and staff.	Dean of Instruction; Coordinator of Institutional Research.
	General education outcomes assessment reviewed and recommendations sought for improving general education outcomes assessment.	Chair, Student Assessment Committee.
Spring 1990	*New Student Profile: Fall Semester 1989* published and distributed to all faculty and staff.	Coordinator of Institutional Research.
	Results of study on writing assessment at PVCC published and distributed to all faculty and staff.	English representative to Student Assessment Committee; Coordinator of Institutional Research.
	Analysis of developmental mathematics, writing, and reading test scores used by math and English faculty for curricular review purposes.	Math and English representatives to Student Assessment Committee.
	Interdisciplinary humanities course reviewed and improved.	NEH Task Force.

DATE	ACTIVITY	PERSON
Summer 1990	*Employer Survey Results for the PVCC Graduating Class of 1987-1988* published and distributed to all faculty and staff.	Coordinator of Institutional Research.
	Follow-up Survey of PVCC Graduates of the Class of 1988-1989 published and distributed to all faculty and staff.	Coordinator of Institutional Research.
August 1990	Special presentation to the faculty during orientation week on implementation of PVCC's student assessment plan.	Dean of Instruction; Chair, Student Assessment Committee; Coordinator of Institutional Research.
Fall 1990	*PVCC Students Transferring to Senior Virginia Public Colleges and Universities: 1989-1990* published and distributed to all faculty and staff.	Coordinator of Institutional Research.
	PVCC "Market Share" of Selected High Schools--Graduating Class of 1989 published and distributed to all faculty and staff.	Coordinator of Institutional Research.
	Recommendations by Task Force for Developmental Education implemented.	Dean of Instruction; Task Force for Developmental Education.
Spring 1991	*New Student Profile: Fall Semester 1989* published and distributed to all faculty and staff.	Coordinator of Institutional Research.
	Analysis of developmental mathematics, writing, and reading test scores used by math and English faculty for curricular review purposes.	Math and English representatives to Student Assessment Committee.
	Interdisciplinary humanities course reviewed and improved.	NEH Task Force.

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